

OPTICAL FIBER AND WAVELENGTH DIVISION MULTIPLEX
TRANSMISSION LINE

5

ABSTRACT OF THE DISCLOSURE

2040ED-ET-93001

An optical fiber suitable for connection with a single mode optical fiber for wavelength division multiplex transmission, that is, a reverse dispersion fiber (RDF) having a center core 11 and a side core layer 12, wherein an apparent refractive index difference of the center core is 1.15 to 1.40%, a constant α expressing a profile of a distribution of refractive index of the center core is 1.0 to 5.0, an apparent refractive index difference of the side core layer is -0.60 to -0.35, a diameter ratio (b/a) of a diameter (b) of the first side core layer to a diameter (a) of the center core is 1.6 to 2.4, a dispersion value is -60 to -35 ps/nm/km and a dispersion slope is -0.40 to -0.10 ps/nm²/km when a wavelength of light propagated through the center core is the 1.55 μ m band, a transmission loss of not more than 0.35 dB/km, a ratio of loss to dispersion (figure of merit (FOM)) of 120 to 500 (ps/nm)/dB, a polarization mode dispersion (PMD) of not more than 0.15 ps/ $\sqrt{\text{km}}$, and an effective core area (A_{eff})

of 19 to 50 μm^2 when the wavelength of the light propagated through the center core is the 1.55 μm band, and a bending loss at a diameter of 20 mm of not more than 5 dB/m.

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